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ABSTRACT

This proposed model conceived by the Atlanta Public Schools' Professional Leadership Program is concerned with bringing about change in the area of instruction and curriculum. The development of this leadership pilot program creates a climate for curriculum revision that facilitates individualization and vitalization of instruction as well as adapts the school program to the individual needs of all pupils. To accomplish the general objective, specific steps are utilized. The high priority needs of staff personnel related to individualizing and vitalizing instruction are identified. A critical mass of effective or potentially effective professional personnel who will function as catalytic change agents for creating a climate conducive to change is selected. In the critical mass of leaders, a high degree of proficiency and skill in group interaction techniques is developed. The change agents are charged with the responsibility of effecting constructive change in the direction of individualizing and vitalizing instruction. Consultative assistance is provided. Changes must also be evaluated. Appended are 16 data tables. (11 references) (SI)

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A PROPOSED MODEL FOR INSERVICE SELECTION AND EVALUATION USING COGNITIVE FLEXIBILITY AS A MAJOR CRITERION: A PRELIMINARY ANALYSIS

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I. INTRODUCTION

Increasingly, educators throughout the country have begun emphasizing individualized instruction in their schools. This is as it should be. It is only through such individualization and vitalization of curriculum that public education can hope to provide the relevancy that is required and even demanded for the youth of today. The Atlanta Public Schools' Professional Leadership Program, conceived as an "innovative and exemplary" pilot program, is chiefly concerned with bringing about just such changes in the schools of Atlanta. The general objective of this project is to develop professional leadership which will create a climate for curriculum revision that will facilitate individualization and vitalization of instruction, adapting the school program to the individual needs, capabilities, and interests of all pupils--including disadvantaged learners, slow and ineffective readers, and children having emotional and other handicaps to learning. To accomplish this general objective, specific steps were planned. (1) to identify high priority needs of staff personnel related to individualizing and vitalizing instruction, (2) to select a critical mass of effective or potentially effective professional personnel who will function as catalytic change agents for creating a climate conducive tc change, (3) to develop in this critical mass of leaders a high degree of proficiency and skill in group interaction techniques, (4) to charge these change agents with the responsibility of effecting constructive change in the direction of individualizing and vitalizing instruction, (5) to provide them with capable consultative assistance, and (6) to evaluate the changes which occur. This critical mass of professional personnel is composed of 20 administrators and 20 other persons selected to train as administrative-instructional interns. Plans called for participation in a workshop each summer, in academic year institutes each year, and in various other meetings with groups of teachers in the five administrative areas of the school system, to plan the changes needed to individualize and vitalize instruction and to put those changes into operation in the schools.

II. Empirical Rationale for Major Objectives of the Program

Selection of educational personnel for inservice training programs and evaluation of the effectiveness of those selected are of paramount importance when the potential impact of such persons upon the quality of public school education is considered. As local, state and Federal funding of such programs continues and as the number of inservice training projects increases in the schools, it is apparent that empirical research relating to selection and evaluation is needed. However, there seems to be little or no reported research pertaining to selection and evaluation of participants in typical public school inservice training programs.

One important factor in any research on selection and evaluation if, indeed, it is to be meaningful, is the specification of actual behaviors associated with effectiveness or success. As Whiteley (1969) pointed out in his early comprehensive review of the counselor education literature, a serious limitation of such research is that intuitive or subjective judgments of effectiveness are used in evaluation with the result that replication is impossible. This observation would also be relevant in other areas of effectiveness research. By incorporating behavioral criteria into research design, it becomes possible not only to specify behaviors that objectively differentiate effective from ineffective personnel but also to relate these behaviors to certain higher order personality variables which may be used as part of a valid selection procedure.

Early studies by Sprinthall, Whiteley and Mosher (1966) and Whiteley, Sprinthall, Mosher and Donaghy (1967) as well as more recent work by Delahunty (1984), Englert (1983), Henjum (1983) and Mythili (1982) all suggest the importance of cognitive flexibility and its other personality correlates in effective interpersonal functioning, i.e., counseling and teaching. In light of these findings, it was decided that one of the major thrusts of the leadership development program should involve this same variable of cognitive flexibility by deriving from the concept operational translations of specific behaviors which would serve as criteria measures of success. In addition, it was proposed that certain objective assessment

instruments different from those used in previous similar studies be investigated as to their utility in predicting effectiveness within the framework of cognitive flexibility.

The variable of interest, cognitive flexibility, relates to the characteristics of open-mindedness, adaptability and tolerance of others' viewpoints. It implies the lack of need for excessive structuring in an interpersonal situation and a nonauthoritarian approach in dealing with situations and individuals. The opposite pole, which could be labeled rigidity or dogmatism, assumes a closed way of thinking, an intolerance toward those with opposing beliefs, difficulty in adapting to new situations and excessive structuring in interpersonal interactions.

The nature of the participants' proposed role as change agents provides the rationale for utilizing the concept of flexibility. In such a role, one would probably not know in advance what solutions would be appropriate for a particular situation or even what problem would be confronted. It would be difficult, if not impossible, to know specifically how any given problem situation could be approached in the most efficient manner. The position of change agent seems clearly to be one calling for a problematic, unstructured approach stressing flexible exploration with local school personnel. The ability to listen, respond and incorporate the other's view of the situation into meaningful analysis and synthesis would require operation from a flexible cognitive system. As noted above, previous research has indicated that cognitive flexibility is an important factor in understanding and communicating with people, i.e., in effective interpersonal interaction. Thus, cognitive flexibility is seen as a dimension most pertinent to the effective role of the participants as described above.

In addition to the concept of cognitive flexibility, it was decided that two additional major areas of emphasis would be small group interaction and communication techniques. To this end, consultants for the summer workshop had as major objectives the improvement of empathic communication abilities. The research of several investigators, especially that of Robert Carkhuff and his colleagues (1969a; 1969b; 1983) provided the theoretical rationale for such areas of emphasis.

It should be pointed out as well that without first-hand knowledge of

effective and innovative techniques in individualized instruction the program would be without a vital component. That is, the ability to create a climate for individualization in a local school would be almost useless unless actual techniques and proven approaches were also available. To implement such objectives, consultants for the summer workshop addressed themselves to just such problems. In addition, the project proposal calls for numerous field trips and on site visits to outstanding and exemplary school systems in the country where successful individualization is known to be occurring. Other consultants from such systems are also scheduled to visit the Atlanta system and share their knowledge with the participants.

III. Innovative and Exemplary Activities of the Program

It is believed that at least four major facets of the Leadership Training Program are innovative and exemplary in nature and thus worthy of note. The basic thrust of the whole project was aimed at alleviating the most pressing problems in the school system as seen by local school personnel--teachers and principals. It would seem that such an approach, practical and straightforward as it is, is noteworthy in the field of public school inservice training programs.

Just as important and probably more unique is the fact that the basic design of the training program was based on an established empirical base. The background of research in the areas of cognitive flexibility, positive pupil-teacher relationship and communication and small group interaction abilities has previously been noted.

In addition, the battery of tests that were administered prior to the summer workshop also should be noted. It is believed that such a comprehensive pre-testing of participants will insure the establishing of valid predictors of effectiveness as judged by on-the-job performance following training. Such predictors can greatly aid in the selection of individuals for future inservice programs.

Finally, the involvement of both university and public school personnel in planning and coordinating the program is worth noting. The coordinator of the program, Dr. James Eisele of the University of Georgia, along with several consultants from other university settings have combined with educators from the Atlanta Public Schools to insure capable leadership and multi-background knowledge for the program.

IV. Instruments for Evaluation

In order to evaluate the major objectives of the leadership program as stated earlier, certain instruments were selected that would aid in an objective assessment. A short description of the instruments employed is presented below.

The Minnesota Teacher Attitude Inventory (MTAI) was selected to measure attitudes toward pupils. The educator who scores in the upper end of this scale is expected to establish better rapport with pupils than one who scores low; the possible range of scores is -150 to +150. The MTAI emerged from the research of Dr. W.W. Cook, Dr. Carroll Leeds and Dr. Robert Callis on the attitudes of educators toward children and school work. It is designed to measure such attitudes and predict how well one will get along with pupils in interpersonal relationships.

To measure dogmatism, Rokeach's Dogmatism Scale, Form E, was used. On this particular instrument subjects indicate disagreement or agreement with each of the 40 items on a seven-point scale. Persons who score high on the scale are assumed to be more intolerant toward those with opposing beliefs, and to experience more difficulty in adapting to new situations. Those who score low are assumed to be more open-minded, adaptable, tolerant of others' view points and flexible in dealing with situations and individuals.

The Gordon Personal Inventory yields a measure of four personality traits important in determining the adjustment of normal individuals in many social, educational and industrial situations. These traits are cautionsness, original thinking, personal relations, and vigor.

The Gordon Personal Profile provides a measure of four aspects of personality which are significant in the daily functioning of the normal person, namely ascendancy, responsibility, emotional stability, and sociability. The Profile is a companion instrument to the Gordon Personality Inventory and the two are often used together to provide an economical coverage of eight important factors in the personality domain.

V. Procedures and Analysis of Data

At this point in the program, data analysis is restricted to an examination of the descriptive information available on the participants as a result of the summer workshop pre-testing. The demographic characteristics of the group as a whole are presented in Table 1.

The means and standard deviations for raw scores on each of the instruments analyzed to date are presented in Table 2 for the 39 participants as a group. Table 3 shows the results of the Rokeach Dogmatism Scale scores of the group in comparison with data gathered by Rokeach and his associates in various other settings. It is clear from Table 3 that the Atlanta educators' group was more openminded than any of the group on which normative data is available.

For comparison purposes, Table 4 presents percentile rank equivalents for raw scores of elementary teachers in large school systems with four years training. This normative group is, in general, more characteristic of the Atlanta group than any of the other groups for whom data is given. The various Atlanta group mean scores on the MTAI are also presented in Table 4. It can be seen that the overall mean score of 68.72 for the Atlanta group is almost at the 60th percentile rank. Further, it should be noted that both the principals and central office staff scored above the 65th percentile mark.

A summary of the analysis of descriptive data on the participants is presented in Tables 5 through 15. For comparative purposes the three natural group divisions were used: teachers - central office staff - principals. The statistical analysis produced a significant F ratio, therefore the Scheffe technique for the multiple comparison of means was used to determine in which of the combinations significant differences existed. It can be seen in Table 6 that the principals had significantly higher MTAI scores than did the teachers--the only significant difference found among the three possible comparisons.

The multiple comparison of mean scores of teachers, central office staff and principals on the Rokeach Dogmatism Scale again revealed a significant difference score. Using the posteriori Scheffe comparison, it was determined that the central office staff had significantly lower dogmatism scores than did the teachers. This was the only significant difference among the three possible comparisons.

A comparison of Black and White educators was also done on Rokeach and MTAI scores and the results are presented in Tables 15 and 16. It can be seen in Table 15 that there was no significant difference between Black and White educators on the characteristic of dogmatism. There was no significant difference between the two groups on the MTAI as can be seen in Table 16.

VI. Future Evaluation

In addition to data that have been collected on the participants for purposes of establishing valid predictors of effectiveness, other evaluation is planned. The post-testing of participants, for example, will take place at the conclusion of the second summer workshop to determine if any significant changes in pertinent personality characteristics have occurred as a result of workshop training.

More importantly, pre- and post-testing will be done in the schools in which program participants will work to assess the effect of their presence upon amount of individualized instruction that goes on. In connection with the local school pre- and post-testing of individualized instruction, one of the currently used organizational climate indices will be employed. It is also suggested that in addition to a paper and pencil test of individualized instruction, some behavioral measure be attempted so as to obtain a more valid measure of this important variable.

There is also much in the way of descriptive data that can be utilized in further analysis. The Gordon Personal Profile and Inventory scores, for example, have not yet been utilized on any comparative basis. The numerous biographical information items -- age, sex, number of years of educational experience, educational level, etc. -- can also be viewed as possible important factors in examination of enrolee characteristics.

With the wealth of descriptive information available, it should be relatively easy to pin point those identifying characteristics of effective educational leaders. This, in itself, would make the entire project worthwhile.

REFERENCES

Carkhuff, R. (1969a). Helping and human relations, Vol. I. New York: Holt, Rinehart and Winston.

Carkhuff, R. (1969b). Helping and human relations, Vol. II. New York: Holt, Rinehart and Winston.

Carkhuff, R. (1983) The Art of Helping. Amherst, MA.: Human Resource Development Press.

Cook, W.W., Leeds, C.H., and Callis, R. (1951). The Minnesota Teacher Attitude Inventory. New York: Psychological Corporation.

Delahunty, M.C. (1984). An investigation of some personality characteristics of two groups of Irish female trainee teachers. Irish Journal of Psychology, 6, 102-123.

Englert, C.C. (1983). Measuring special education teacher effectiveness. Exceptional Children, 50, 247-254.

Gordon, L.V., and Medland, F.F. (1965). The cross-group stability of peer ratings of leadership potential. Personnel Psychology, 18, 173-177.

Henjum, A. (1983). Let's select "self-actualizing teachers. Education, 104, 51-55.

Mythili, S.P. (1982). The relation of behavioral rigidity to obsessive-compulsiveness and authoritiarinism. Journal of Indian Psychology, 4, 38-44.

Rokeach, M. (1960). The open and closed mind. New York: Basic Books.

Sprinthall, N. Whiteley, J., and Mosher, R. (1966). Cognitive flexibility as a dimension of counselor behavior: Definition, rationale, research focus. Counselor Education and Supervision, 5, 188-197.

Whiteley, J.M., Sprinthall, N.A., Mosher, R., and Donaghy, R. (1967). Selection and evaluation of counselor effectiveness. Journal of Counseling Psychology, 14, 226-234.

TABLE 1

Demographic Characteristics

of participants (N=39)

Age (in years)		Experience (in years)	
20-29	4	0-9	12
30-39	19	10-19	17
40-49	10	20-29	6
50-59	6	30-39	4
median = 36		median = 13	

Sex		Race		Present Level	
M	= 17	Black	= 20	Elementary	= 24
F	= 22	White	= 19	Secondary	= 7
				Unclassified	= 8

Highest Level of Certification		Hours of Graduate Work (Semester hrs.)	
BA	= 6	0-15	9
MA	= 24	16-30	4
6th yr.	= 9	31-45	4
		46-60	4
		61-75	13
		76-80	2
		81-95	2
		96+	1
		median = 57	

Table 2. Means and Standard Deviations of MTAI, Rokeach, Gordon Inventory and Gordon Profile Scores.

Measure	Mean	S.D.
MTAI (N=39)	68.72	7.8
Rokeach Dogmatism Scale (N=39)	126.79	1.5
Gordon Personal Inventory (N=39)		
Cautiousness	27.26	4.3
Originality	29.00	4.9
Personal Relations	27.97	4.1
Vigor	25.72	5.0
Gordon Personal Profile (N=38)		
Ascendancy	24.45	3.9
Responsibility	27.79	4.2
Emotional Stability	25.50	4.3
Sociability	22.47	3.7

TABLE 3

Dogmatism Scale Scores

of Participants and Other Groups

Group	N	Mean	S.D.
English Colleges	80	152.8	26.2
English Workers	60	175.8	26.0
Ohio State University I	22	142.6	27.6
Ohio State University II	28	143.8	22.1
Ohio State University III	21	142.6	23.3
Ohio State University IV	29	141.5	27.8
Ohio State University V	58	141.3	28.2
VA Domiciliary	80	183.2	26.6
U. of Washington	107	132.2	22.5
Atlanta Public Schools	39	126.8	

TABLE 4. Percentile Rank Equivalents for Raw Scores on the Minnesota Teacher Attitude Inventory for Experienced (4 yrs. training)Elementary Teachers from Systems with 21 or more teachers.

Percentile Rank	Raw Score
99	114
95	103
90	100
80	88
75	82
70	79
60	70
50	60
40	49
30	42
25	36
20	22
10	7
5	-18
1	-50
N	247
Mean	55.1
SD	36.7

MTAI Mean Scores By Various Group Breakdowns for the EPDA Participants

Overall Group	68.72
Teachers	53.01
Central Office Staff	77.05
Principals	81.02
Black	70.06
White	66.07

SUMMARY OF DESCRIPTIVE DATA STATISTICAL ANALYSIS

TABLE 5. Mean MTAI Scores of Comparative Groups

Teachers:	53.1
Central Office:	77.5
Principals:	81.2

TABLE 6. Multiple Comparison of means of teachers X central office staff X principals on MTAI.

Source of Variation	Sum of squares	Degrees of freedom	Mean squares
Between	6,728.2	2	3,364.1
Within	24,385.7	36	677.4
Total	31,113.9	38	4.96*

*p .05

TABLE 7. A posteriori Scheffe comparison of teachers X principals on MTA scores.

Source of Variation	Sum of squares	Degrees of freedom	Mean squares
Between	5,690.9	1	5,690.9
Within	21,827.3	27	808.4
Total	27,518.2	28	F = 7.04*

*p .05

Note: The teacher X principal analysis was the only significant comparison among the three possible comparisons.

TABLE 8. A posteriori Scheffe comparison of teachers X central office staff on MTAI.

Source of Variation	Sum of squares	Degrees of freedom	Mean squares
Between	3,675.1	1	3,675.1
Within	19,375.4	24	807.3
Total	23,050.5	25	F = 4.55 (F of 5.86 required for significance)

TABLE 9. A posteriori Scheffe comparison of central office X principals on MTAI.

Source of Variation	Sum of squares	Degrees of freedom	Mean squares
Between	78.7	1	78.7
Within	7,568.8	21	360.4
Total	7,568.8	22	F 1

TABLE 10. Mean Rokeach Scores of Comparison Groups

Teachers:	136.1
Central Office:	115.1
Principals:	124.4

TABLE 11. Multiple comparison of mean scores of teachers, central office staff and principals on Rokeach Dogmatism Scale.

Source of Variation	Sum of squares	Degrees of freedom	Mean squares
Between	3,338.5	2	1,669.3
Within	16,679.9	36	463.3
Total	20,018.4	38	3.6*
			p .05

TABLE 12. A posteriori Scheffe comparison of teacher X central office staff on Rokeach scores.

Source of Variation	Sum of squares	Degrees of freedom	Mean squares
Between	2,704.0	1	2,704.0
Within	10,811.9	24	450.5
Total	13,515.9	25	F = 6.0*
			p .05

Note: The teacher X central office comparison was the only significant one among the three possible.

TABLE 13. A posteriori Scheffe comparison of central office staff X principals on Rokeach scores.

Source of Variation	Sum of squares	Degrees of freedom	Mean squares
Between	487.1	1	487.1
Within	12,570.1	21	598.6
Total	13,057.2	22	F 1

TABLE 13. A posteriori Scheffe comparison of teachers X principals on Rokeach scores.

Between	978.1	1	978.1
Within	11,298.1	27	419.3
Total	12,298.1	28	F = 2.33 (F of 5.86 required for sig. at .05)

TABLE 15. Test of significant difference between Black and White Rokeach scores.

Source of Variation	Sum of squares	Degrees of freedom	Mean squares
Between	722.6	1	722.6
Within	52,358.4	37	1,415.1
Total	53,081.4	38	F 1

Mean Rokeach Scores

Black: 127.5
White: 119.1

TABLE 16. Test of significant difference between Negro and White MTAI scores.

Source of Variation	Sum of squares	Degrees of freedom	Mean squares
Between	145.4	1	145.4
Within	30,968.5	37	836.9
Total	31,113.9	38	F 1

Mean MTAI Scores

Black: 70.6
White: 66.7